Determining the effect of *Phragmites australis* on blue crab (*Callinectes sapidus*) survival in Blackbird Creek, Delaware

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Abstract

The invasion of the nonnative common reed, *Phragmites australis*, at Blackbird Creek in Townsend, Delaware has altered the ecosystem which previously consisted primarily of saltmarsh cord grass, *Spartina alterniflora*. Containment of *Phragmites* spread is being managed by applying glyphosate herbicide to the marsh and burning it. The effect of *Phragmites'* presence on native plants and animals is under investigation. A species of particular concern and ecological importance is the blue crab, *Callinectes sapidus*, which is economically valuable in fisheries. A concurrent study is being conducted to determine the habitat and sites blue crabs prefer using trawl nets and crab traps to determine their abundance at six different sites. The six 300 meter stretches along the creek vary in vegetation by being *Phragmites* dominated, *Spartina* dominated, mixed vegetation or having been sprayed with herbicide and burned. This study uses those sites to investigate blue crab survivability in various vegetation types. Crabs are tethered to a stake in the marsh using approximately 1.5 to 3 m of fishing line to limit their movement but allow them to function normally. Three crabs are placed within each site 150 m apart and after one day the crabs are retrieved from the line and their conditions are recorded. This survivability information in conjunction with the abundance and distribution data can be used to determine how *Phragmites* growth impacts the blue crab population in Blackbird Creek.